

but slight breaks occurred on 9th and frequently to 30th. 10th, Water from Morganzia crevasse, in West Baton Rouge Parish, La., slowly encroaching on rear lands. Northern Texas railway continues inundated; between Vicksburg and Munroe 40 miles is traversed by skiffs, rest by rail; regular through trains not expected before May 1st. 16th, Crevasse on left bank of Bayou La Fourche, one mile below Thibodeau, La. Night 16th and 17th, levee broke on Tensas river near Stanton's plantation, submerging entire Black and Tensas river country. 17th, Frogmore, Concordia Parish, La.: "water has commenced falling; levees on Cross Bayou, above and below here have given away at several places. Moro and Dunbarton levees on Tensas river have given way, flooding the country for miles." Mineola, Texas, 1st, during previous night very heavy rain and remarkable rise in Sabine river; washouts on railway between Mineola and Tyler. 3rd, Toccoa Falls, Ga., heaviest rain for years; about 12 miles air-line railway track washed out and bridge over Tugalo river carried away. 18th, Freshet in Bogue Chitto, submerging 6 miles track of Jackson railway and interrupting travel between Brookhaven and Coon City, Miss. 25th, Farmers City, Ill., creeks higher than ever before known. Princeton, Cal., 22nd, Sacramento river, 23 ft. 1 in. above zero, highest water ever known. 23rd, much damage in Sacramento, San Joaquin, Santa Clara, Napa, and other valleys in central and western California, from very heavy rains, 20th-23rd. 21st, Yolo levee, near Sacramento, broke. Peoria, Ill., 24th, city flooded, many buildings damaged; numerous washouts and land-slides, interrupting railway travel. Litchfield, Mich., 30th, St. Joseph river highest for 25 years. Fayette, Miss., 16th, streams highest ever seen; crops, bridges and stock swept away, damage very great.

*Hail.*—Hail-storms have been especially frequent and cannot be enumerated in detail. The following storms were unusually severe or interesting from the size of the hail-stones. *March* 31st, very violent in parts of Cowen and Dallas counties, Texas: near Plano the hail zone was 200 yards wide; the stones were as large as hickory nuts, and covered the ground like snow-drifts. *April* 1st, Ft. Ewell, Tex., violent, stones pierced tents and knocked shingles from roofs. 4th, Knoxville, Tenn., very severe, stones as large as partridge's eggs fell in great quantities. 6th, Spartansburg, S. C., "terrific, the severest since memorable storm of June, 1840. Some stones 6 inches in circumference. Much damage to glass, and to fruit trees." Denny's Cross Roads, S. C., "worst ever known in this section; lasting 20 minutes; stones from size of partridge to hen's eggs." 7th, Maxey's, Ga., several stones 12 inches in circumference; hail fell for 15 minutes, much like snow, a calm prevailing. Bairdstown, Ga., one stone weighed 2 pounds. 16th, Merced, Cal., heaviest for years. 17th, Fayetteville, Tenn., stones size of hen's eggs, weighing 4 to 6 ounces. 18th, Mentor, Ohio, stones as large as marbles. 22nd, Tama, Iowa, stones as large as english walnuts. 26th, Oakville, Ont., violent. Montgomery, N. Y., 6th, violent, doing much damage to buildings. 29th, Columbia, S. C., stones as large as hen's eggs. Gainesville, Ga., 4th, stones one inch in diameter; 6th, "size of chestnuts." Nora Springs, Iowa, 24th, of one to two inches in diameter, "soft, snowy texture." Fort Madison, Ia, 24th, size of quail's eggs. Point Pleasant, La., half-inch in diameter. Hudson, Mich., 3rd, "very severe, stones large as walnuts. Twenty-four picked up half-hour after falling weighed 72 oz. Fowls killed and farm houses damaged." Pierce City, Mo., 24th, stones 1.5 by 1.2 in. in diameter. Newark, N. J., 5th,  $\frac{1}{4}$  to  $\frac{1}{2}$  in. in diameter. Franklin, Pa., 4th, large, breaking much glass. Wytheville, Va., 25th, average diameter,  $\frac{1}{2}$  in., of some  $\frac{3}{4}$  inch. Red Bluff, 20th,  $\frac{3}{4}$  in. in diameter, covering ground. Fort Sill, 17th,  $\frac{1}{2}$  in. in diameter. Castroville, Tex., 28th and Mason, Tex., 6th, "size of hen's eggs." Near Mt. Airy, Ga., 3rd, "reported as large as a man's fist." Savannah, Ga., 4th, some 1 $\frac{1}{2}$  in. in diameter; much glass broken in city; gardens seriously damaged. Augusta, 6th, size of partridge eggs, covered the ground; "this hail-storm is reported to have killed young stock in Orangeburg, Co., S. C."

## RELATIVE HUMIDITY.

The percentages of mean relative humidity for the month range as follows: New England, from 57.6 to 85.5; Middle Atlantic States, 47.2 to 84.1; South Atlantic States, 60.4 to 79.2; Eastern Gulf States, 67.6 to 77.6; Western Gulf States, 59.3 to 79.5; Ohio valley and Tennessee, 53.6 to 70.0; Lower Lake region, 61.9 to 66.6; Upper Lake region, 62.9 to 72.6; Upper Mississippi valley, 53.7 to 62.0; Missouri valley, 45.9 to 68.4; Red River of the North valley, 72.8 to 75.0; Eastern Rocky Mountain Slope, 23.0 to 72; Western Plateau, 19.0 to 54.8; California, 67.5 to 78.9; Oregon, 52.0 to 70. *High stations* report the following averages not corrected for altitude: Pike's Peak, 68.9; Mt. Washington, 85.0 per cent.

## WINDS.

*Total Movement of the Air.*—The following are among the *largest* total movements in various sections of the country: Pike's Peak, 16,279; Portsmouth, N. C., 13,560; Delaware Breakwater, 13,958 miles; Wood's Holl, 12,491; North Platte, 11,948; Indianola, 11,845; Ft. Elliott, Tex., 11,050; Grand Haven, 10,875; Bismarck, 10,575; St. Louis, 9,499; Erie, 9,491; Red Bluff, 8,621; Cairo, 7,671; Punta Rasa, 7,889. Frost-work prevented a complete record on Mt. Washington. The *smallest* in various districts are: El Paso, 2,546; Roseburg, 2,569; Augusta, 2,787; Uvade, 3,167; Tuscon, 3,448; Lynchburg, 3,794; Toledo, 4,083; Nashville, 4,140; Montgomery, 4,733; Little Rock, 5,118; Springfield, Mass., 5,163; Baltimore, 5,398; Dubuque, 6,203; Escanaba, 6,804.

*Local Storms.*—Violent local storms, in unusual numbers, occurred during *April*. Tornadoes, causing loss of life or doing serious injury to property, were reported from Kansas and Louisiana on the 2nd; from Georgia on the 3rd, 4th and 24th; from Missouri, Arkansas, Iowa, Illinois and Wisconsin on the 18th and 24th; from Illinois on the 23rd; from Illinois and Missouri on the 24th, and from Mississippi on the 25th, 29th, 30th. The following details have been gathered from reports made by Signal Service and voluntary observers